

CLAIMS

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A5 → 1. A powders-affixed nonwoven fabric prepared from a fiber web comprising fine short fibers having a fiber diameter of 4 μ m or less and a fiber length of 3 mm or less in a dispersed state in said fiber web, and powder materials affixed to said fiber web formed by a method other than a wet-laid method.

2. The powders-affixed nonwoven fabric according to claim 1, wherein an average particle size of the powder materials is 50 μ m or less.

3. The powders-affixed nonwoven fabric according to claim 1, wherein a mass ratio of the fine short fibers with respect to a whole mass of the powders-affixed nonwoven fabric is 1 to 40 mass %.

4. The powders-affixed nonwoven fabric according to claim 1, wherein an adhesion rate of substances adhered to said powder-affixed nonwoven fabric is 0.5 mass% or less.

5. The powders-affixed nonwoven fabric according to claim 1, wherein the fine short fibers are formed from island components remaining after removing a sea component from islands-in-sea type fibers.

6. The powders-affixed nonwoven fabric according to claim 1, wherein the fine short fibers are formed from one or more organic components.

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A6 → 7. A process for manufacturing a powders-affixed nonwoven fabric comprising the steps of:
ejecting aggregates of fine short fibers having a fiber diameter of 4 μ m or less and a fiber length of 3 mm or less, or a group of the aggregates, and/or mechanically dividable fibers capable of generating fine short fibers having a fiber diameter of 4 μ m or less and a fiber length of 3 mm or

less, or aggregates of the mechanically dividable fibers, together with powder materials, from a nozzle into a gas by an action of a compressed gas, to thereby divide the aggregates of the fine short fibers or the group thereof into the fine short fibers, and/or divide the mechanically dividable fibers or the aggregates thereof into the fine short fibers, and disperse the resulting fine short fibers and the powder materials; collecting the dispersed fine short fibers and the powder materials to form a powders-containing fiber web; and bonding the powders-containing fiber web, and affixing the powder materials thereto to obtain the powders-affixed nonwoven fabric.

8. The process according to claim 7, wherein bundled aggregates of fine short fibers are supplied to the nozzle.

9. The process according to claim 7, wherein before supplying the fine-fibers aggregates or the group thereof, and/or the mechanically dividable fibers or the aggregates thereof to the nozzle, adhered substances are removed from the fine-fibers aggregates or the group thereof, and/or the mechanically dividable fibers or the aggregates thereof.

10. The process according to claim 7, wherein a gas stream supplied to the nozzle is substantially a laminar flow.

11. The process according to claim 7, wherein the fine-fibers aggregates or the group thereof, and/or the mechanically dividable fibers or the aggregates thereof, and the powder materials are ejected from the nozzle and brought into collision with a colliding means placed in front of the nozzle.

12. A sheet material comprising at least one layer of a powders-affixed nonwoven fabric prepared from a fiber web comprising fine short fibers having a fiber diameter of 4 μ m

A77 or less and a fiber length of 3 mm or less in a dispersed state in said fiber web, and powder materials affixed to said fiber web formed by a method other than a wet-laid method.

13. The sheet material according to claim 12, further comprising a layer free of the powder materials on at least one surface.

A8 14. A process for manufacturing a sheet material comprising the steps of:

jecting aggregates of fine short fibers having a fiber diameter of 4 μ m or less and a fiber length of 3 mm or less, or a group of the aggregates, and/or mechanically dividable fibers capable of generating fine short fibers having a fiber diameter of 4 μ m or less and a fiber length of 3 mm or less, or aggregates of the mechanically dividable fibers, together with powder materials, from a nozzle into a gas by an action of a compressed gas, to thereby divide the aggregates of the fine short fibers or the group thereof into the fine short fibers, and/or divide the mechanically dividable fibers or the aggregates thereof into the fine short fibers, and disperse the resulting fine short fibers and the powder materials;

collecting the dispersed fine short fibers and the powder materials to form a powders-containing fiber web; and bonding the powders-containing fiber web, affixing the powder materials thereto, and at the same time bonding a layer free of the powder materials, to obtain the sheet material containing a powders-affixed nonwoven fabric.